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I CLAIM:

1. A method of forming individual strips of confectionery product, said method including the steps of:
providing an ultrasonic slitting tool, having at least a pair of cutting edges, said tool having node and anti-node portions, said cutting edges being spaced apart a given distance equal to the width of a strip to be formed therewith;

forming a generally planar and continuous slab of confectionery material;

continuously advancing said slab along a given path toward a slitting station;

locating said ultrasonic slitting tool in said slitting station;

energizing said slitting tool to cause said cutting edges of said slitting tool to vibrate through a given amplitude at a ultrasonic frequency;

contacting said slab with said energized slitting tool to form at least one strip of confectionery stock from said slab; and,

continuously advancing said strip along said given path past said slitting station for further processing of said strip of confectionery product.

2. The method of claim 1 wherein said tool is ultrasonically vibrated at a frequency of at least ten kHz.

3. The method of claim 1 wherein said tool is ultrasonically vibrated at a frequency of at least about 20 kHz to about 40 kHz.

4. The method of claim 1 wherein the cutting edges of said tool are oriented at an angle of from about 40° to about 60° with respect to the horizontal plane of said slab.

FOOTNOTES

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5. The method of claim 1 wherein the amplitude of vibration of the cutting edges of said tool is from about 10 to about 50 microns.

6. The method of claim 1 wherein the amplitude of vibration of the cutting edges of said tool is from about 28 to about 35 microns.

7. The method of claim 1 wherein said slitting tool includes at least three cutting edges which form at least a pair of adjacent strips of confectionery product, said method further comprising the step of increasing the dimensional spacing between said adjacent strips immediately after the formation thereof in said slitting station.

8. The method of claim 1 wherein said slitting tool includes a horn having integrally formed blades and said cutting edges are formed on said blades.

9. The method of claim 8 wherein the said cutting edges of said blades are at said anti-node portion of said tool.

10. The method of claim 1 wherein said slitting tool vibrates in an axial direction upon the energization thereof.

11. The method of claim 1 wherein said slitting tool includes a horn having separately formed blades which are fixed to said horn and said cutting edges are formed on said blades.

12. The method of claim 11 wherein said blades are non-resonant and vibrate in response to the ultrasonic vibration of said horn when said tool is energized.

13. An apparatus for continuous slitting of a slab of confectionery material, said apparatus comprising:
a slitting station;
an input conveyor for supplying a continuous slab of confectionery stock to said slitting station; and,

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an ultrasonic stack located in said slitting station, said ultrasonic stack including an energy converter for changing electrical energy into ultrasonic vibration, a booster for increasing the amplitude of said vibration, and an ultrasonic slitting tool which includes an ultrasonic horn having at least a pair of parallel cutting edges spaced apart a given distance equal to the width of a strip to be formed in said slab, said cutting edges being positioned to contact said slab of confectionery material as it is passed through said slitting station.

14. The apparatus of claim 13 wherein said horn and said at least a pair of parallel cutting edges are integrally formed.

15. The apparatus of claim 13 wherein said at least a pair of cutting edges are formed in separate blades which are fixed to said horn.

16. The apparatus of claim 13 wherein said input conveyor comprises a plurality of separate conveyor strips which are spaced apart at a sufficient distance to permit said cutting edges to be received therebetween.

17. The apparatus of claim 13 wherein said slitting tool includes at least three cutting edges which are spaced and positioned to form at least a pair of adjacent strips of confectionery material, said apparatus further comprising means for increasing the dimensional spacing between adjacent strips immediately after the formation thereof in said slitting station.

18. The apparatus of claim 13 wherein each of said cutting edges is oriented at an acute angle of from about 40° to about 60° with respect to the plane of said input conveyor.

19. The apparatus of claim 13 wherein a plurality of said cutting edges are included in each of a plurality of ganged ultrasonic stacks.

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20. The apparatus of claim 19 wherein each of said cutting edges is formed on a slitter blade which is oriented at an acute angle of about 45° with respect to the plane of said input conveyor.

B. add

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